BIOMEDICAL RESEARCH WORKGROUP

Co-Chairs
George R. Saade, M.D.
University of Texas Medical Branch at Galveston

Catherine Y. Spong, M.D.
Eunice Kennedy Shriver National Institute of Child Health and Human Development

Key Issues

- Identify causes and mechanism of preterm birth
- Improve data collection on preterm birth:
    - National vital statistics
    - Morbidity and mortality measures
- Develop and test clinical interventions for prevention of preterm birth
- Evaluate management strategies for indicated and spontaneous preterm deliveries

Short-term Goals

- Identify contributors to the rise in preterm birth, including:
  - Late preterm births and their indications
  - Health and socioeconomic disparities
  - Multiple gestations (Assisted Reproductive Technology [ART], etc.)
  - Non-medically indicated preterm birth
  - Other

Short-term Goals

- Conduct studies to determine the risks versus benefits of indicated early and late preterm birth in relation to perinatal morbidity and mortality
  - Develop accurate antenatal indicators of fetal maturity
  - Identify novel methods of fetal well-being assessment

Short-term Goals

- Develop predictors of perinatal morbidity and mortality that are specific to gestational age and birth weight
  - Emphasize perinatal morbidity and mortality as primary outcome measures
  - Consistently integrate gestational age and birth weight in measures
  - Obtain accurate gestational dating (ultrasound in early pregnancy)

Short-term Goals

- Enhance the national vital records system to:
  - Utilize the new birth certificates in all reporting jurisdictions
  - Facilitate timely data reporting
  - Ensure data quality and consistency in vital records
  - Develop and implement a classification for preterm birth, including subgroups related to the pathogenesis of preterm birth

Mid-term Goals

- Expand research on promising clinical interventions to prevent preterm birth
  - 17P: mechanism of action, clinical indications, optimal forms, dosing, safety
  - Clinical trials during preconception and early prenatal periods (e.g., folic acid)
  - Clinical trials of bundling of interventions in prenatal care
  - Prenatal interventions to improve acute and long-term outcomes for infants born preterm

Mid-term Goals

- Improve ability to identify women at risk for preterm birth
  - Identify biomarkers (proteomics/genomics/ other biomarkers) for susceptibility or prediction of preterm birth
  - Foster multidisciplinary collaboration focusing on complex system biology

Mid-term Goals

- Determine the fetal and maternal innate and acquired immune responses that may trigger premature labor in response to microorganisms, using conventional and advanced molecular techniques

Mid-term Goals

- Explain the mechanisms relating preterm birth to other adverse pregnancy outcomes, such as stillbirth, Intrauterine Growth Retardation (IUGR), preeclampsia, congenital anomalies, and abruption

Mid-term Goals

- Support the training and career development of scientists and physician-scientists in preterm birth research through novel and existing programs
  - Include support for mentoring, bridge funding
  - Address professional liability insurance as a barrier to a career in research

Long-term Goals

- Initiate, develop, and establish a comprehensive understanding of the basic mechanisms of preterm birth, with emphasis on genetic, epigenetic and environmental interactions, using the latest technologies
  - Establish a national biorepository that is easily accessible to researchers to facilitate research into preterm birth
  - Create multi- and trans-disciplinary centers focused on preterm birth research

Long-term Goals

- Promote multidisciplinary studies of aberrant peri-implantational events and placentation related to preterm birth and other adverse pregnancy outcomes

- Identify predictors and develop interventions addressing preterm birth and other adverse outcomes in nulliparous women

Long-term Goals

- Investigate the biological basis of racial/ethnic and socioeconomic disparities and preterm birth

- Conduct clinical trials of interventions based on pathway-specific predictors of preterm birth

Other Goals

- Encourage research into improving singleton pregnancy rates from ovulation promotion/induction

- Develop reporting mechanisms for ovulation induction cycles using gonadotrophins through a registry

- Explain the association between maternal Body-Mass Index (BMI), both low and high, and gestational length

Other Goals

- Enhance studies of preterm birth in the National Children's Study and other cohort studies

- Explore the fetal contribution to preterm birth, including fetal growth, congenital anomalies, etc.

- Increase basic research efforts to understand the physiology of normal labor and delivery

Other Goals

- Increase basic research efforts to understand the physiology of normal labor and delivery
- Identify subgroups of mothers and children who are at risk for adverse long-term morbidity